

King Fahd University for Petroleum and Minerals

Calculus 2

Quiz2

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Name:-

ID:-

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Evaluate the following integrals

Q1) $\int \sin(\ln x) dx$

Q2) $\int \frac{x^2 + 1}{(x^2 - 2x + 2)^2} dx$

Q3) $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \frac{1}{3 \sin x - 4 \cos x} dx$

Q4) Find the area of the region bounded by

$$y = \sin^3 x, \quad y = \cos^3 x, \quad \frac{\pi}{4} \leq x \leq \frac{5\pi}{4}$$

Q5) Find the number b such that the average of $f(x) = 2 + 6x - 3x^2$ on the interval $[0, b]$ is equal to 3

Evaluate the following integrals

Q6) $\int \frac{xe^x}{(x+1)^2} dx$ Q7) $\int (2x^2 + 1)e^x dx$ Q8) $\int \frac{x \tan^{-1} x}{(1+x^2)^2} dx$